Exhibit 1

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Steinberg

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(54) **SYSTEM AND METHOD FOR USING A NETWORKED ELECTRONIC DEVICE AS AN OCCUPANCY SENSOR FOR AN ENERGY MANAGEMENT SYSTEM**

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G05B 15/00 (2006.01)
G05D 23/00 (2006.01)

(52) **U.S. Cl.** ..... **700/276**; 700/299; 236/46 R

(58) **Field of Classification Search** ..... 700/276, 700/278, 295, 296; 62/176.6; 236/46 R
See application file for complete search history.

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(Continued)

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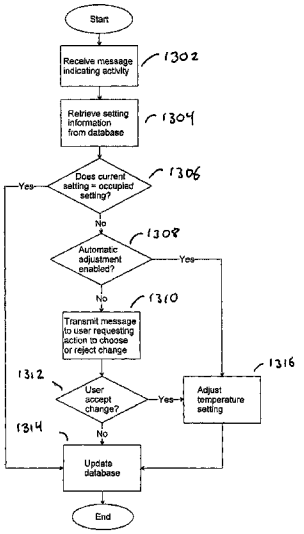
(57) **ABSTRACT**

The invention comprises systems and methods for detecting the use of networked consumer electronics devices as indications of occupancy of a structure for purposes of automatically adjusting the temperature setpoint on a thermostatic HVAC control. At least one thermostat is located inside a structure and is used to control an HVAC system in the structure. At least one networked electronic device is used to indicate the state of occupancy of the structure. The state of occupancy is used to alter the setpoint on the thermostatic HVAC control to reduce unneeded conditioning of unoccupied spaces.

18 Claims, 8 Drawing Sheets



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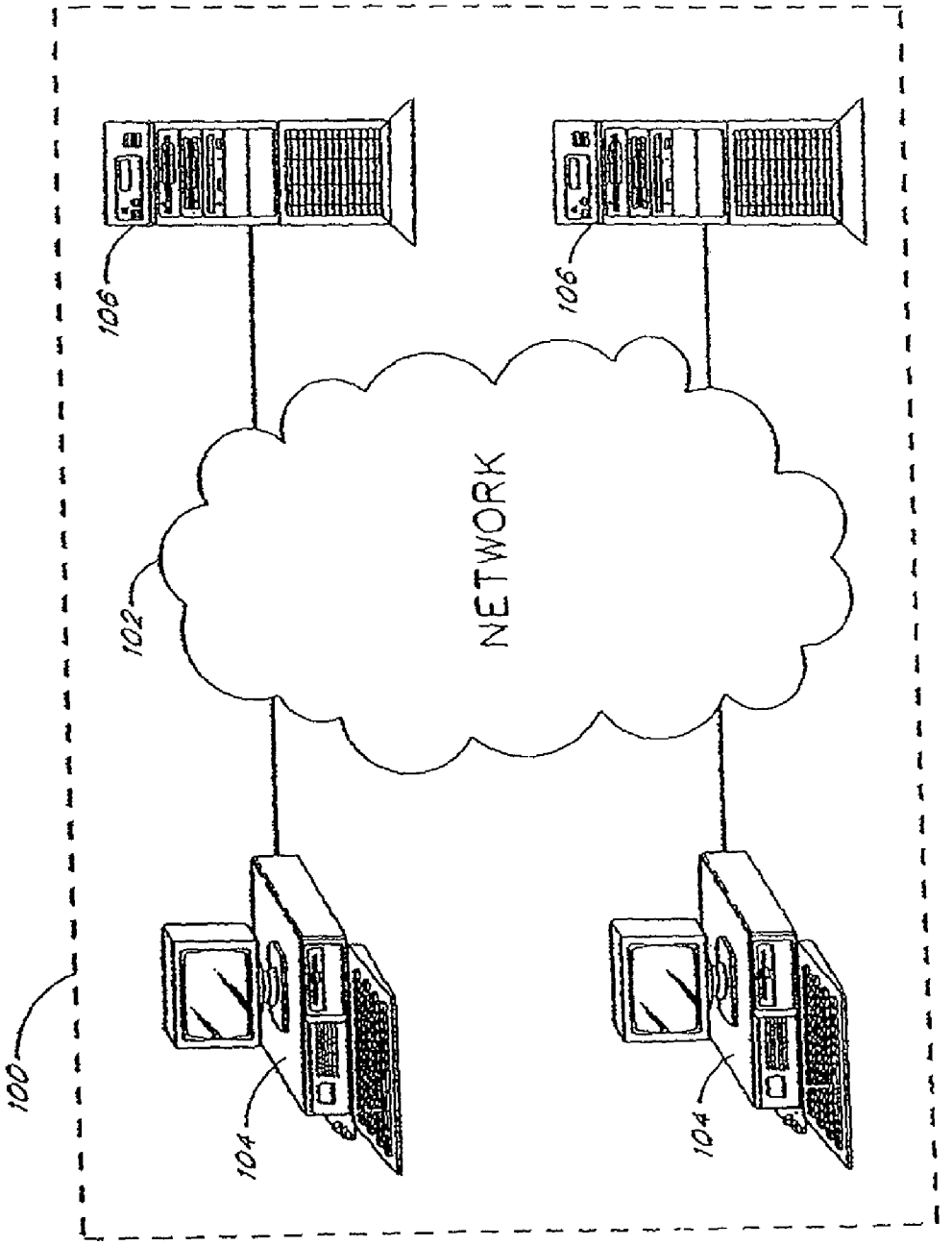


FIG. 1

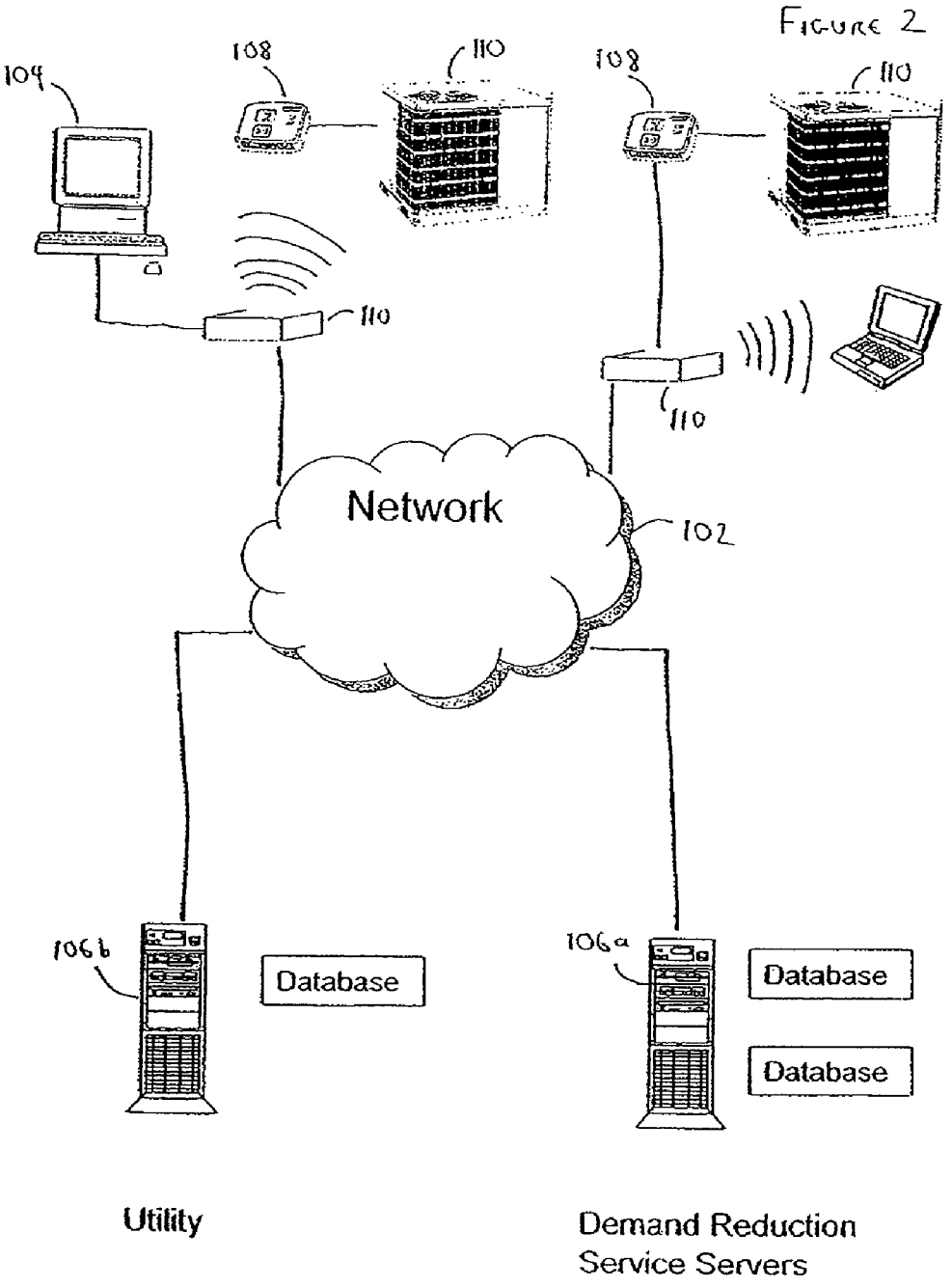


Figure 2
104
108
110
108
110
110
110
Network
102
106b
Database
106a
Database
Database
Utility
Demand Reduction
Service Servers

FIGURE 3

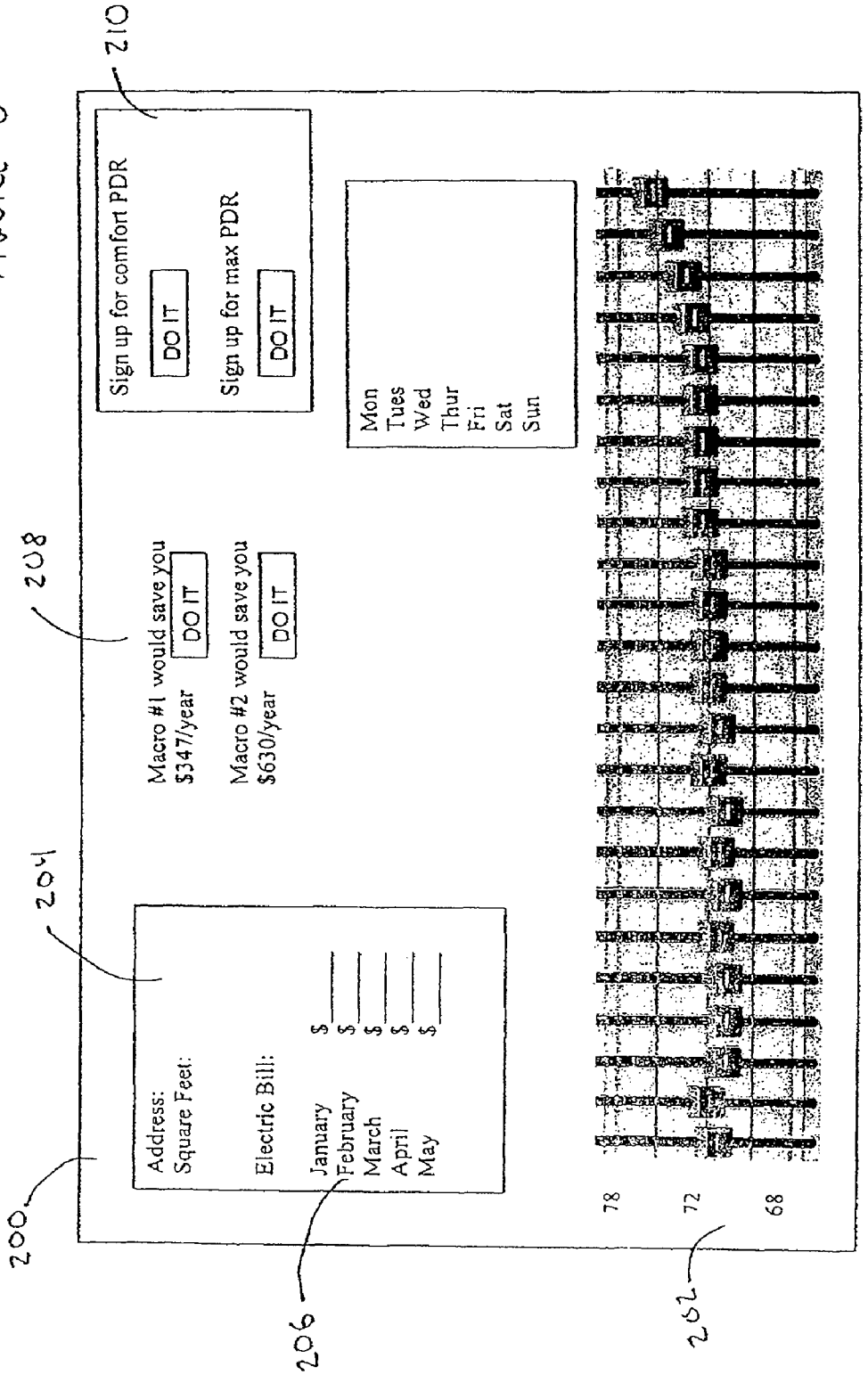

210
Sign up for comfort PDR
DO IT
Sign up for max PDR
DO IT
Mon
Tues
Wed
Thur
Fri
Sat
Sun
208
Macro #1 would save you $347/year
DO IT
Macro #2 would save you $630/year
DO IT
204
Address:
Square Feet:
Electric Bill:
January
February
March
April
May
$
$
$
$
$
200
206
78
72
68
202

FIGURE 4

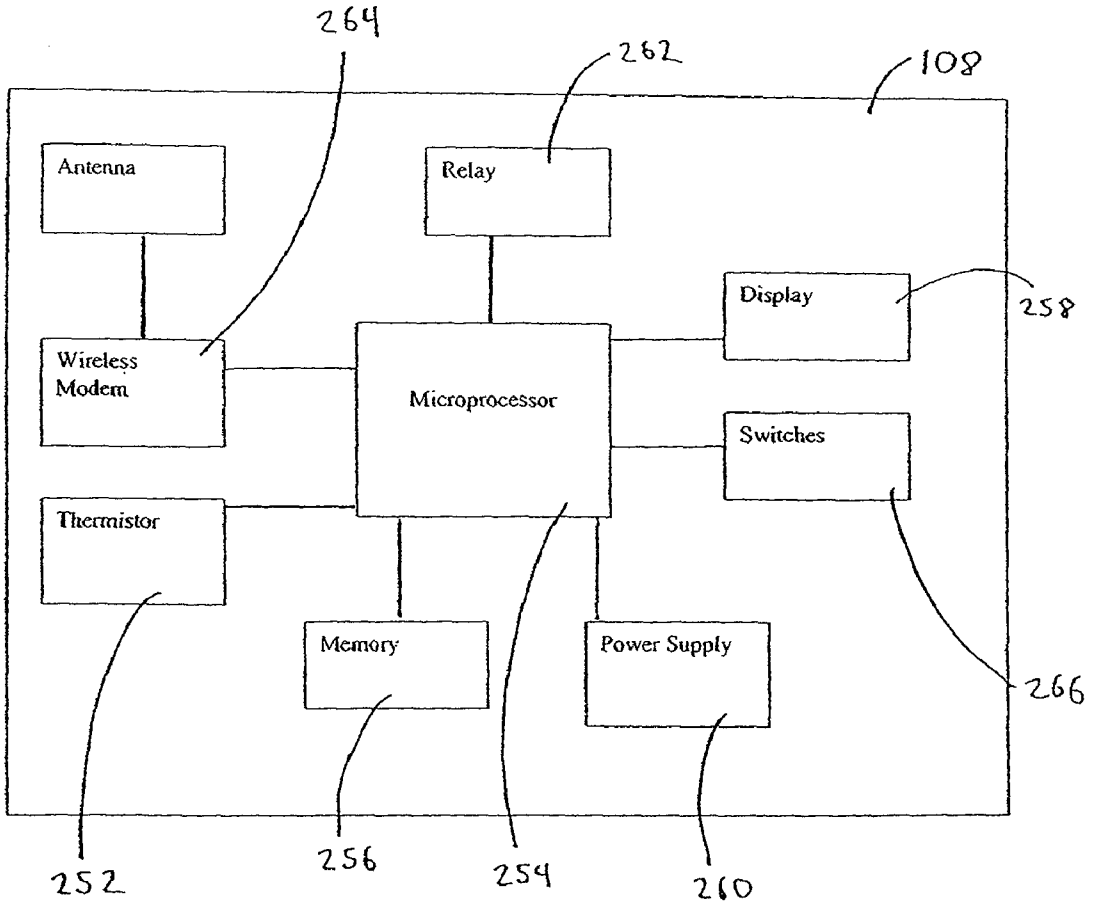

264
262
108
Antenna
Relay
Display
258
Wireless Modem
Microprocessor
Switches
Thermistor
Memory
Power Supply
266
252
256
254
260

FIGURE 5

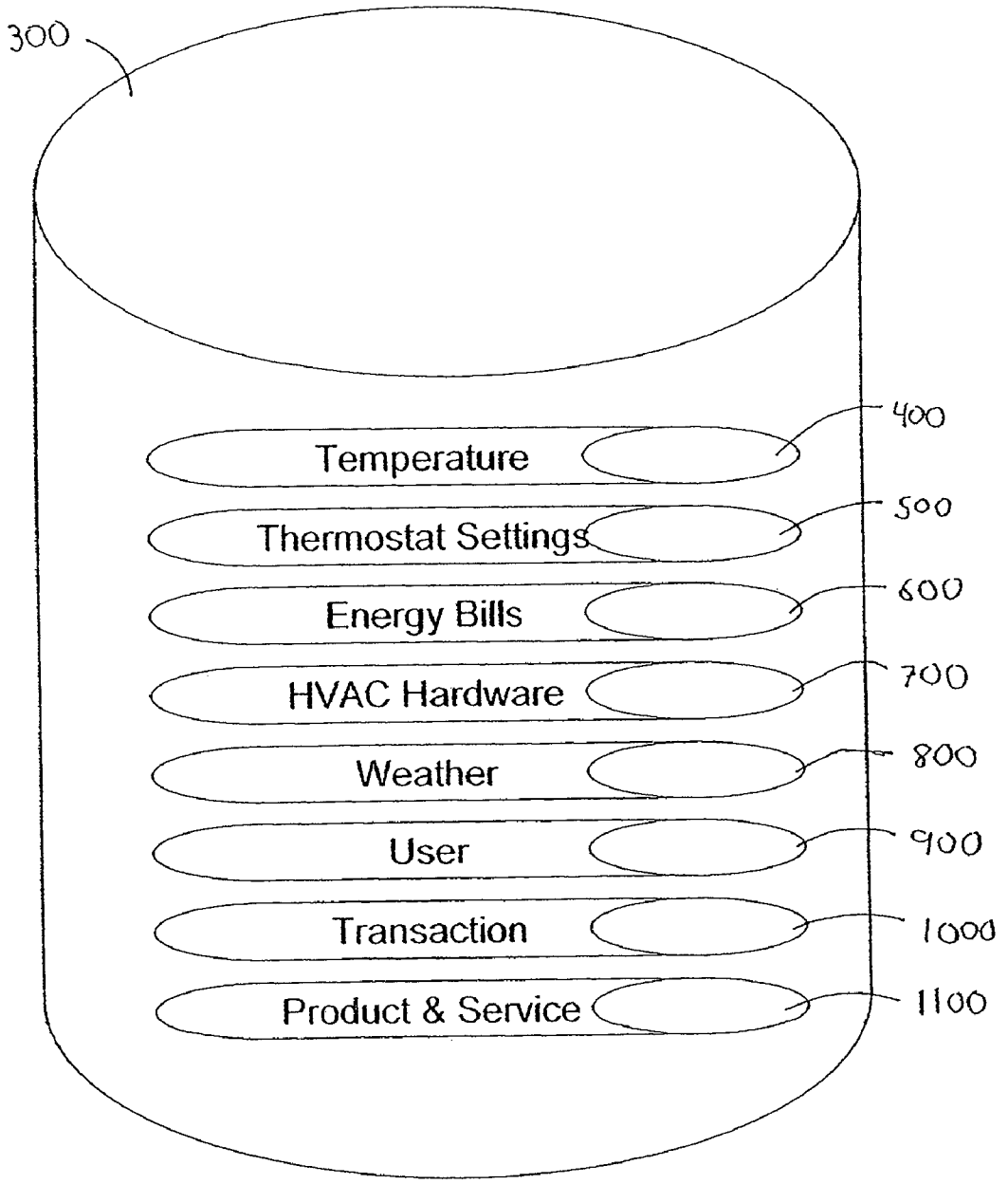

300
Temperature
400
Thermostat Settings
500
Energy Bills
600
HVAC Hardware
700
Weather
800
User
900
Transaction
1000
Product & Service
1100

Fig 6

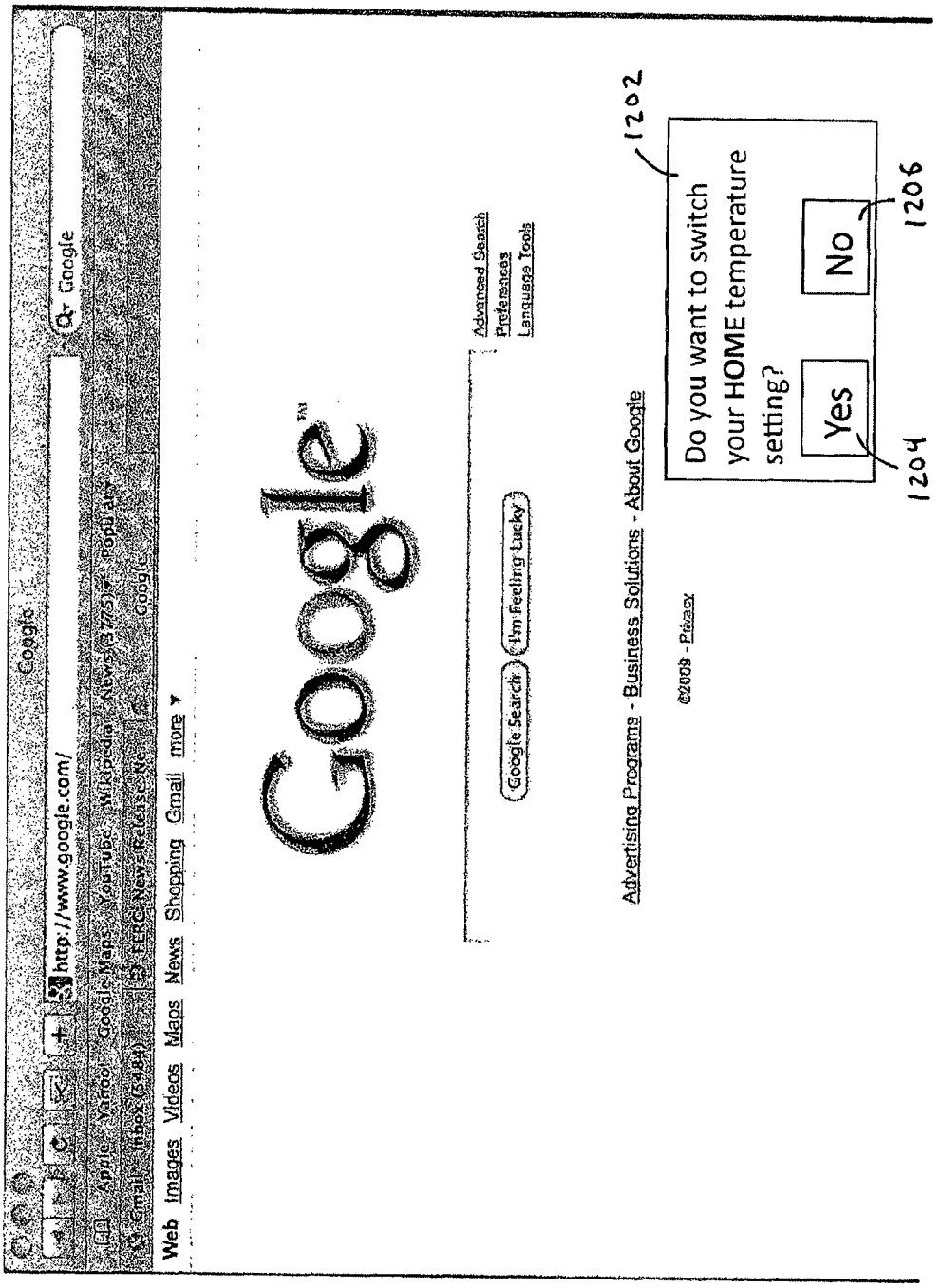

Google
http://www.google.com/
Google
Web Images Videos Maps News Shopping Gmail more
Google
Advanced Search
Preferences
Language Tools
Google Search
I'm Feeling Lucky
Advertising Programs - Business Solutions - About Google
©2009 - Privacy
1202
Do you want to switch your HOME temperature setting?
Yes
No
1204
1206

Fig 7

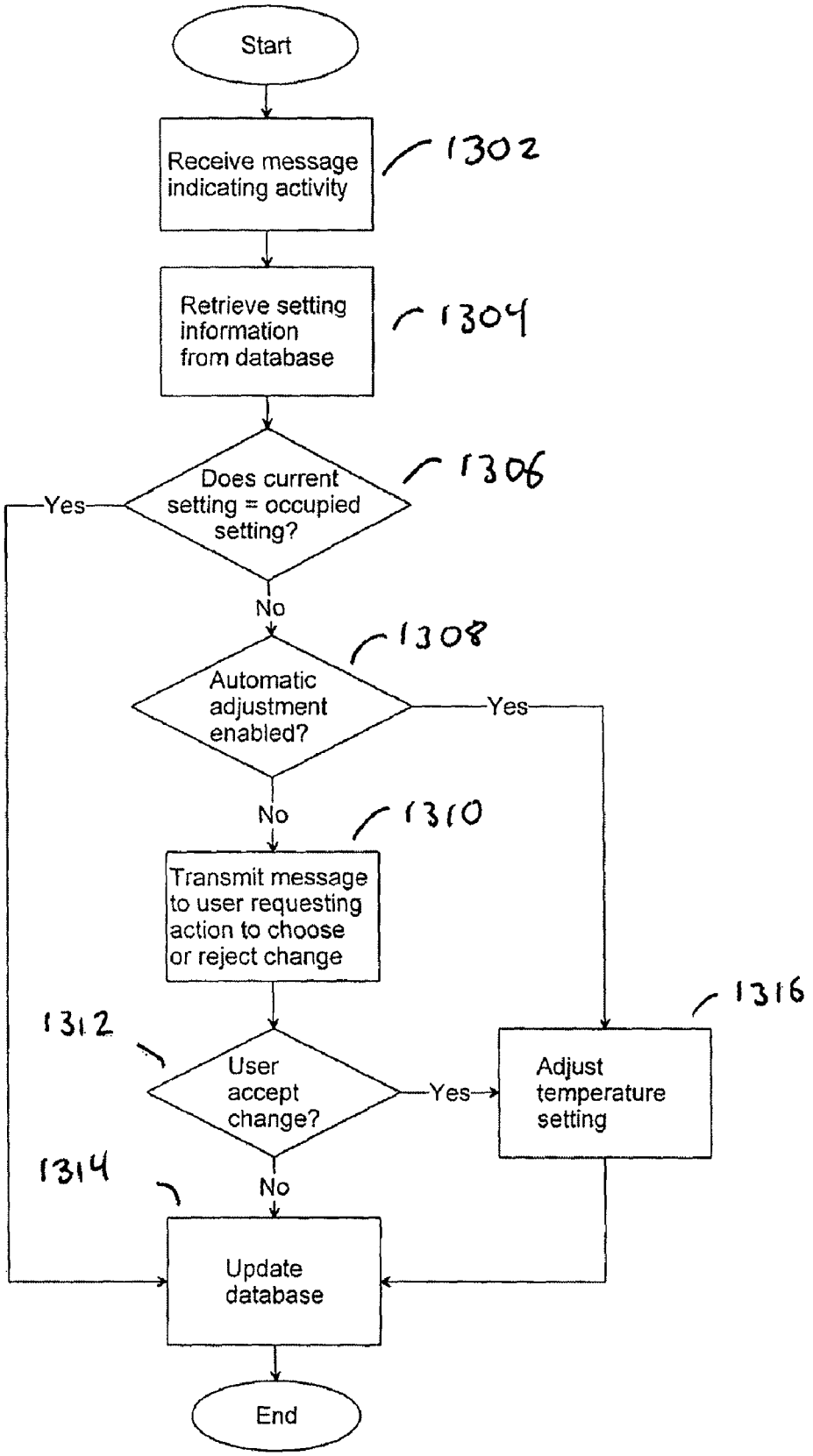
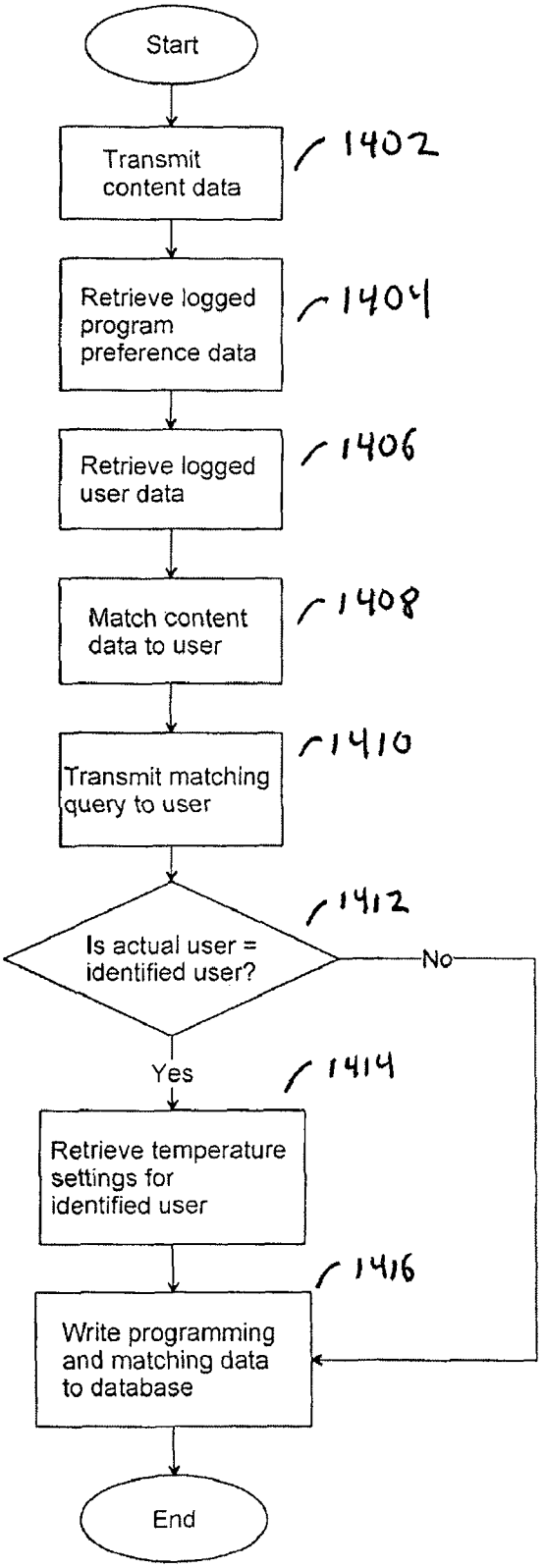

Start
Receive message indicating activity
1302
Retrieve setting information from database
1304
Does current setting = occupied setting?
1306
Yes
No
Automatic adjustment enabled?
1308
Yes
No
Transmit message to user requesting action to choose or reject change
1310
User accept change?
1312
Yes
Adjust temperature setting
1316
No
1314
Update database
End

Fig 8


Start
Transmit content data
1402
Retrieve logged program preference data
1404
Retrieve logged user data
1406
Match content data to user
1408
Transmit matching query to user
1410
Is actual user = identified user?
1412
No
Yes
1414
Retrieve temperature settings for identified user
1416
Write programming and matching data to database
End

SYSTEM AND METHOD FOR USING A NETWORKED ELECTRONIC DEVICE AS AN OCCUPANCY SENSOR FOR AN ENERGY MANAGEMENT SYSTEM

CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims priority to U.S. Provisional Application No. 61/134,714, filed Jul. 14, 2008, the entirety of which is incorporated herein by reference and is to be considered part of this specification.

BACKGROUND OF THE INVENTION

Field of the Invention

This invention relates to the use of thermostatic HVAC and other energy management controls that are connected to a computer network. More specifically, the present invention pertains to the use of user interactions with an interface such as a personal computer or an Internet-enabled television as signal related to occupancy to inform an energy management system.

Heating and cooling systems for buildings (heating, ventilation and cooling, or HVAC systems) have been controlled for decades by thermostats. At the most basic level, a thermostat includes a means to allow a user to set a desired temperature, a means to sense actual temperature, and a means to signal the heating and/or cooling devices to turn on or off in order to try to change the actual temperature to equal the desired temperature. The most basic versions of thermostats use components such as a coiled bi-metallic spring to measure actual temperature and a mercury switch that opens or completes a circuit when the spring coils or uncoils with temperature changes. More recently, electronic digital thermostats have become prevalent. These thermostats use solid-state devices such as thermistors or thermal diodes to measure temperature, and microprocessor-based circuitry to control the switch and to store and operate based upon user-determined protocols for temperature vs. time.

These programmable thermostats generally offer a very restrictive user interface, limited by the cost of the devices, the limited real estate of the small wall-mounted boxes, and the inability to take into account more than two variables: the desired temperature set by the user, and the ambient temperature sensed by the thermostat. Users can generally only set one series of commands per day, and in order to change one parameter (e.g., to change the late-night temperature) the user often has to cycle through several other parameters by repeatedly, pressing one or two buttons.

Because the interface of programmable thermostats is so poor, the significant theoretical savings that are possible with them (sometimes cited as 25% of heating and cooling costs) are rarely realized. In practice, studies have found that more than 50% of users never program their thermostats at all. Significant percentages of the thermostats that are programmed are programmed sub-optimally, in part because, once programmed, people tend to not to re-invest the time needed to change the settings very often.

A second problem with standard programmable thermostats is that they represent only a small evolutionary step beyond the first, purely mechanical thermostats. Like the first thermostats, they only have two input signals—ambient temperature and the preset desired temperature. The entire advance with programmable thermostats is that they can shift between multiple present temperatures at different times without real-time involvement of a human being.

Because most thermostats control HVAC systems that do not offer infinitely variable output, traditional thermostats are designed to permit the temperature as seen by the thermostat to vary above and below the setpoint to prevent the HVAC system from constantly and rapidly cycling on and off, which is inefficient and harmful to the HVAC system. The temperature range in which the thermostat allows the controlled environment to drift is known as both the dead zone and, more formally, the hysteresis zone. The hysteresis zone is frequently set at +/−1 degree Fahrenheit. Thus if the setpoint is 68 degrees, in the heating context the thermostat will allow the inside temperature to fall to 67 degrees before turning the heating system on, and will allow it to rise to 69 degrees before turning it off again.

As energy prices rise, more attention is being paid to ways of reducing energy consumption. Because energy consumption is directly proportional to setpoint—that is, the further a given setpoint diverges from the balance point (the inside temperature assuming no HVAC activity) in a given house under given conditions, the higher energy consumption will be to maintain temperature at that setpoint), energy will be saved by virtually any strategy that over a given time frame lowers the average heating setpoint or raises the cooling setpoint. Conventional programmable thermostats allow homeowners to save money and energy by pre-programming setpoint changes based upon comfort or schedule. For example, in the summer, allowing the setpoint to rise by several degrees (or even shutting off the air conditioner) when the home is unoccupied will generally save significantly on energy. But such thermostats have proven to be only minimally effective in practice. Because they have such primitive user interfaces, they are difficult to program, and so many users never bother at all, or set them up once and do not alter the programming even if their schedules change.

In the hotel industry, the heating and cooling decisions made in hundred or even thousands of individual rooms with independently controlled HVAC systems are aggregated into a single energy bill, so hotel owners and managers are sensitive to energy consumption by those systems. Hotel guests often turn the air conditioner to a low temperature setting and then leave the room for hours at a time, thereby wasting considerable energy. An approach commonly used outside of the United States to combat this problem is to use a keycard to control the HVAC system, such that guests place the keycard into a slot mounted on the wall near the door of the room which then triggers the lights and HVAC system to power up, and turn them off when the guest removes the card upon leaving the room. However, because most hotels give each guest two cards, it is easy to simply leave the extra card in the slot, thus defeating the purpose of the system. Recently, systems have been introduced in which a motion sensor is connected to the control circuitry for the HVAC system. If no motion is detected in the room for some predetermined interval, the system concludes that the room is unoccupied, and turns off or alters the setpoint of the HVAC system to a more economical level. When the motion sensor detects motion (which is assumed to coincide with the return of the guest), the HVAC system resets to the guest's chosen setting.

Adding occupancy detection capability to residential HVAC systems could also add considerable value in the form of energy savings without significant tradeoff in terms of comfort. But the systems used in hotels do not easily transfer to the single-family residential context. Hotel rooms tend to be small enough that a single motion sensor is sufficient to determine with a high degree of accuracy whether or not the

room is occupied. A single motion sensor in the average home today would have limited value because there are likely to be many places one or more people could be home and active yet invisible to the motion sensor. The most economical way to include a motion sensor in a traditional programmable thermostat would be to build it into the thermostat itself. But thermostats are generally located in hallways, and thus are unlikely to be exposed to the areas where people tend to spend their time. Wiring a home with multiple motion sensors in order to maximize the chances of detecting occupants would involve considerable expense, both for the sensors themselves and for the considerable cost of installation, especially in the retrofit market. Yet if control is ceded to a single-sensor system that cannot reliably detect presence, the resulting errors would likely lead the homeowner to reject the system.

It would thus be desirable to provide a system that could detect occupancy without requiring the installation of additional hardware; that could accurately detect occupancy regardless of which room in the house is occupied, and could optimize energy consumption based upon dynamic and individually configurable heuristics.

SUMMARY OF THE INVENTION

In one embodiment, the invention comprises a thermostat attached to an HVAC system, a local network connecting the thermostat to a larger network such as the Internet, and one or more computers attached to the network, and a server in bi-directional communication with a plurality of such thermostats and computers. The server pairs each thermostat with one or more computers or other consumer electronic devices which are determined to be associated with the home in which the thermostat is located. The server logs the ambient temperature sensed by each thermostat vs. time and the signals sent by the thermostats to their HVAC systems. The server also monitors and logs activity on the computers or other consumer electronic devices associated with each thermostat. Based on the activity patterns evidenced by keystrokes, cursor movement or other inputs, or lack thereof, the server instructs the thermostat to change temperature settings between those optimized for occupied and unoccupied states.

At least one embodiment of the invention comprises the steps of determining whether one or more networked electronic devices inside a structure are in use; determining whether said use of said networked electronic devices indicates occupancy of said structure; and adjusting the temperature setpoint on a thermostatic controller for an HVAC system for said structure based upon whether or not said structure is deemed to be occupied.

At least one embodiment of the invention comprises at least one said thermostat having at least one temperature setting associated with the presence of one or more occupants in said structure, and at least one temperature setting associated with the absence of occupants in said structure; one or more electronic devices having at least a user interface; where said electronic devices and said thermostat are connected to a network; where said setpoint on said thermostat is adjusted between said temperature setting associated with the presence of one or more occupants in said structure and said temperature setting associated with the absence of occupants in said structure based upon the use of said user interface for said electronic device.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** shows an example of an overall environment in which an embodiment of the invention may be used.

FIG. **2** shows a high-level illustration of the architecture of a network showing the relationship between the major elements of one embodiment of the subject invention.

FIG. **3** shows an embodiment of the website to be used as part of the subject invention.

FIG. **4** shows a high-level schematic of the thermostat used as part of the subject invention.

FIG. **5** shows one embodiment of the database structure used as part of the subject invention.

FIG. **6** shows the browser as seen on the display of the computer used as part of the subject invention.

FIG. **7** is a flowchart showing the steps involved in the operation of one embodiment of the subject invention.

FIG. **8** is a flowchart that shows how the invention can be used to select different HVAC settings based upon its ability to identify which of multiple potential occupants is using the computer attached to the system.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

FIG. **1** shows an example of an overall environment **100** in which an embodiment of the invention may be used. The environment **100** includes an interactive communication network **102** with computers **104** connected thereto. Also connected to network **102** are one or more server computers **106**, which store information and make the information available to computers **104**. The network **102** allows communication between and among the computers **104** and **106**.

Presently preferred network **102** comprises a collection of interconnected public and/or private networks that are linked to together by a set of standard protocols to form a distributed network. While network **102** is intended to refer to what is now commonly referred to as the Internet, it is also intended to encompass variations which may be made in the future, including changes additions to existing standard protocols.

When a user of the subject invention wishes to access information on network **102**, the buyer initiates connection from his computer **104**. For example, the user invokes a browser, which executes on computer **104**. The browser, in turn, establishes a communication link with network **102**. Once connected to network **102**, the user can direct the browser to access information on server **106**.

One popular part of the Internet is the World Wide Web. The World Wide Web contains a large number of computers **104** and servers **106**, which store HyperText Markup Language (HTML) documents capable of displaying graphical and textual information. HTML is a standard coding convention and set of codes for attaching presentation and linking attributes to informational content within documents.

The servers **106** that provide offerings on the World Wide Web are typically called websites. A website is often defined by an Internet address that has an associated electronic page. Generally, an electronic page is a document that organizes the presentation of text graphical images, audio and video.

In addition to the Internet, the network **102** can comprise a wide variety of interactive communication media. For example, network **102** can include local area networks, interactive television networks, telephone networks, wireless data systems, two-way cable systems, and the like.

In one embodiment, computers **104** and servers **106** are conventional computers that are equipped with communications hardware such as modem or a network interface card. The computers include processors such as those sold by Intel and AMD. Other processors may also be used, including general-purpose processors, multi-chip processors, embedded processors and the like.

Computers **104** can also be handheld and wireless devices such as personal digital assistants (PDAs), cellular telephones and other devices capable of accessing the network. Computers **104** can also be microprocessor-controlled home entertainment equipment including advanced televisions, televisions paired with home entertainment/media centers, and wireless remote controls.

Computers **104** may utilize a browser configured to interact with the World Wide Web. Such browsers may include Microsoft Explorer, Mozilla, Firefox, Opera or Safari. They may also include browsers or similar software used on handheld, home entertainment and wireless devices. The storage medium may comprise any method of storing information. It may comprise random access memory (RAM), electronically erasable programmable read only memory (EEPROM), read only memory (ROM), hard disk, floppy disk, CD-ROM, optical memory, or other method of storing data. Computers **104** and **106** may use an operating system such as Microsoft Windows, Apple Mac OS, Linux, Unix or the like. Computers **106** may include a range of devices that provide information, sound, graphics and text, and may use a variety of operating systems and software optimized for distribution of content via networks.

FIG. **2** illustrates in further detail the architecture of the specific components connected to network **102** showing the relationship between the major elements of one embodiment of the subject invention. Attached to the network are thermostats **108** and computers **104** of various users. Connected to thermostats **108** are HVAC units **110**. The HVAC units may be conventional air conditioners, heat pumps, or other devices for transferring heat into or out of a building. Each user is connected to the server **106** via wired or wireless connection such as Ethernet or a wireless protocol such as IEEE 802.11, a gateway **110** that connects the computer and thermostat to the Internet via a broadband connection such as a digital subscriber line (DSL) or other form of broadband connection to the World Wide Web. Server **106** contains the content to be served as web pages and viewed by computers **104**, as well as databases containing information used by the servers.

In the currently preferred embodiment, the website **200** includes a number of components accessible to the user, as shown in FIG. **3**. Those components may include a means to enter temperature settings **202**, a means to enter information about the user's home **204**, a means to enter the user's electricity bills **206**, means to calculate energy savings that could result from various thermostat-setting strategies **208**, and means to enable and choose between various arrangements **210** for demand reduction with their electric utility provider as intermediated by the demand reduction service provider.

FIG. **4** shows a high-level block diagram of thermostat **108** used as part of the subject invention. Thermostat **108** includes temperature sensing means **252**, which may be a thermistor, thermal diode or other means commonly used in the design of electronic thermostats. It includes a microprocessor **254**, memory **256**, a display **258**, a power source **260**, a relay **262**, which turns the HVAC system on an and off in response to a signal from the microprocessor, and contacts by which the relay is connected to the wires that lead to the HVAC system. To allow the thermostat to communicate bi-directionally with the computer network, the thermostat also includes means **264** to connect the thermostat to a local computer or to a wireless network. Such means could be in the form of Ethernet, wireless protocols such as IEEE 802.11, IEEE 802.15.4, Bluetooth, cellular systems such as CDMA, GSM and GPRS, or other wireless protocols. The thermostat **250** may also include controls **266** allowing users to change settings directly at the thermostat, but such controls are not necessary to allow the thermostat to function.

The data used to generate the content delivered in the form of the website is stored on one or more servers **106** within one or more databases. As shown in FIG. **5**, the overall database structure **300** may include temperature database **400**, thermostat settings database **500**, energy bill database **600**, HVAC hardware database **700**, weather database **800**, user database **900**, transaction database **1000**, product and service database **1100** and such other databases as may be needed to support these and additional features.

The website **200** will allow users of connected thermostats **250** to create personal accounts. Each user's account will store information in database **900**, which tracks various attributes relative to users of the site. Such attributes may include the make and model of the specific HVAC equipment in the user's home; the age and square footage of the home, the solar orientation of the home, the location of the thermostat in the home, the user's preferred temperature settings, whether the user is a participant in a demand reduction program, etc.

As shown in FIG. **3**, the website **200** will permit thermostat users to perform through the web browser substantially all of the programming functions traditionally performed directly at the physical thermostat, such as temperature set points, the time at which the thermostat should be at each set point, etc. Preferably the website will also allow users to accomplish more advanced tasks such as allow users to program in vacation settings for times when the HVAC system may be turned off or run at more economical settings, and set macros that will allow changing the settings of the temperature for all periods with a single gesture such as a mouse click.

FIG. **6** represents the screen of a computer or other device **104** using a graphical user interface connected to the Internet. The screen shows that a browser **1200** is displayed on computer **104**. In one embodiment, a background application installed on computer **104** detects activity by a user of the computer, such as cursor movement, keystrokes or otherwise, and signals the application running on server **106** that activity has been detected. Server **106** may then, depending on context, (a) transmit a signal to thermostat **108** changing setpoint because occupancy has been detected at a time when the system did not expect occupancy; (b) signal the background application running on computer **104** to trigger a software routine that instantiates a pop-up window **1202** that asks the user if the server should change the current setpoint, alter the overall programming of the system based upon a new occupancy pattern, etc. The user can respond by clicking the cursor on "yes" button **1204** or "No" button **1206**. Equilvalent means of signalling activity may be employed with interactive television programming, gaming systems, etc.

FIG. **7** represents a flowchart showing the steps involved in the operation of one embodiment of the subject invention. In step **1302**, computer **104** transmits a message to server **106** via the Internet indicating that there is user activity on computer **104**. This activity can be in the form of keystrokes, cursor movement, input via a television remote control, etc. In step **1304** the application queries database **300** to retrieve setting information for the HVAC system. In step **1306** the application determines whether the current HVAC program is intended to apply when the home is occupied or unoccupied. If the HVAC settings then in effect are intended to apply for an occupied home, then the application terminates for a specified interval. If the HVAC settings then in effect are intended to apply when the home is unoccupied, then in step **1308** the application will retrieve from database **300** the user's specific preferences for how to handle this situation. If the user has

previously specified (at the time that the program was initially set up or subsequently modified) that the user prefers that the system automatically change settings under such circumstances, the application then proceeds to step **1316**, in which it changes the programmed setpoint for the thermostat to the setting intended for the house when occupied. If the user has previously specified that the application should not make such changes without further user input, then in step **1310** the application transmits a command to computer **104** directing the browser to display a message informing the user that the current setting assumes an unoccupied house and asking the user in step **1312** to choose whether to either keep the current settings or revert to the pre-selected setting for an occupied home. If the user selects to retain the current setting, then in step **1314** the application will write to database **300** the fact that the users has so elected and terminate. If the user elects to change the setting, then in step **1316** the application transmits the revised setpoint to the thermostat. In step **1314** the application writes the updated setting information to database **300**.

FIG. **8** is a flowchart that shows how the invention can be used to select different HVAC settings based upon its ability to identify which of multiple potential occupants is using the computer attached to the system. In step **1402** computer **104** transmits to server **106** information regarding the type of activity detected on computer **104**. Such information could include the specific program or channel being watched if, for example, computer **104** is used to watch television. The information matching, for example, TV channel 7 at 4:00 PM on a given date to specific content may be made by referring to Internet-based or other widely available scheduling sources for such content. In step **1404** server **106** retrieves from database **300** previously logged data regarding viewed programs. In step **1406** server **106** retrieves previously stored data regarding the residents of the house. For example, upon initiating the service, one or more users may have filled out online questionnaires sharing their age, gender, schedules, viewing preferences, etc. In step **1408**, server **106** compares the received information about user activity to previously stored information retrieved from database **300** about the occupants and their viewing preferences. For example, if computer **104** indicates to server **106** that the computer is being used to watch golf, the server may conclude that an adult male is watching; if computer **104** indicates that it is being used to watch children's programming, server **106** may conclude that a child is watching. In step **1410** the server transmits a query to the user in order to verify the match, asking, in effect, "Is that you. Bob?" In step **1412**, based upon the user's response, the application determines whether the correct user has been identified. If the answer is no, then the application proceeds to step **1416**. If the answer is yes, then in step **1414** the application retrieves the temperature settings for the identified occupant. In step **1416** the application writes to database **300** the programming information and information regarding matching of users to that programming.

In an alternative embodiment, the application running on computer **104** may respond to general user inputs (that is, inputs not specifically intended to instantiate communication with the remote server) by querying the user whether a given action should be taken. For example, in a system in which the computer **104** is a web-enabled television or web-enabled set-top device connected to a television as a display, software running on computer **104** detects user activity, and transmits a message indicating such activity to server **106**. The trigger for this signal may be general, such as changing channels or adjusting volume with the remote control or a power-on event. Upon receipt by server **104** of this trigger, server **104** transmits instructions to computer **104** causing it to display a dialog box asking the user whether the user wishes to change HVAC settings.

What is claimed is:

1. A method for varying temperature setpoints for an HVAC system comprising:

storing at least a first HVAC temperature setpoint associated with a structure that is deemed to be non-occupied and at least a second HVAC temperature setpoint associated with said structure deemed to be occupied;

determining whether one or more networked electronic devices inside said structure are in use, wherein said networked electronic devices comprise a graphic user interface comprising a display, wherein said networked electronic devices receive input from one or more users and wherein use of said networked electronic devices comprises at least one of cursor movement, keystrokes or other user interface actions intended to alter a state of one or more of said networked electronic devices by one or more users;

in response to use of said one or more networked devices, determining that said HVAC system is set to said first HVAC temperature setpoint indicating that said structure is deemed to be non occupied;

determining that said one or more users has previously indicated a preference that said user's input be obtained before automatically changing said first HVAC temperature setpoint to said second HVAC temperature setpoint indicating that said structure is deemed to be occupied;

prompting said one or more users based on said determining that said one or more of said user's input should be obtained, wherein said prompting sends a message to at least one of said networked electronic devices that said first HVAC system is set for a non-occupied structure and whether to change said first HVAC temperature setpoint to said second HVAC temperature setpoint associated with occupancy of said structure;

in response to said prompting, receiving input from said one or more users to keep said first HVAC temperature setpoint; and

keeping said first HVAC temperature setpoint based upon said input from said one or more users.

2. The method of claim **1** in which at least one of said networked electronic devices is a television.

3. The method of claim **1** in which at least one of said networked electronic devices is a personal computer.

4. The method of claim **1** in which at least one of said networked electronic devices is connected to the Internet.

5. The method of claim **1** in which programming being watched or listened to using at least one of said networked electronic devices is used to determine which occupant of said structure is likely to be present, and the second HVAC temperature setpoint for said thermostatic controller is selected based upon the preferences of the occupant, determined to be using said at least one networked electronic device.

6. The method of claim **1** in which at least one of said networked electronic devices is a game console.

7. The method of claim **1** in which at least one of said networked electronic devices communicates with a remote server.

8. The method of claim **1** further comprising adjusting said temperature setpoint with a remote computer.

9. The method of claim **1** in which said first HVAC temperature setpoint is varied automatically based on said input from said one or more users.

10. A system for altering the setpoint on a thermostat for space conditioning of a structure comprising:

at least one thermostat having at least a first temperature setpoint associated with a non-occupied structure, and at least a second temperature setpoint associated with the existence of occupants in said structure;

one or more electronic devices having at least a graphic user interface comprising a display wherein said electronic devices receive input from one or more users and wherein use of said electronic devices comprises at least one of cursor movement, keystrokes or other user interface actions intended to alter a state of one or more of said electronic devices by one or more users wherein activity of one or more networked electronic devices indicates whether said thermostat should be changed from said first temperature setpoint to said second temperature setpoint;

wherein said electronic devices and said thermostat are connected to a network;

an application comprising one or more computer processors in communication with said network, wherein said application determines whether said one or more electronic devices are in use and in response, whether said thermostat is set to said first temperature setpoint that indicates said structure is not occupied,

said application determining that said one or more users has previously indicated a preference that said user's input be obtained before automatically changing said first HVAC temperature setpoint to said second HVAC temperature setpoint indicating that said structure is deemed to be occupied;

said application prompting said one or more users based on said determining that said one or more of said user's input should be obtained,

wherein said application provides electronic notice to one or more of said users of said electronic devices that said thermostat is set for a non-occupied structure and whether to keep said first temperature setpoint or change to said second temperature setpoint; and

wherein said application in response to said prompting, receives input from said one or more users to keep said first HVAC temperature setpoint; and

wherein said thermostat is kept at said first temperature setpoint based upon said input from said one or more users.

11. The system of claim **10** in which at least one of said electronic devices is a television.

12. The system of claim **10** in which at least one of said electronic devices is a personal computer.

13. The system of claim **10** in which at least one of said electronic devices is connected to the Internet.

14. The system of claim **10** in which the programming being watched or listened to using said electronic devices is used to determine which occupant of said structure is likely to be using at least one of said electronic devices, and the setpoint for said thermostatic controller is selected based upon the preferences of the occupant determined to be using said at least one electronic device.

15. The system of claim **10** in which at least one of said electronic devices is a game console.

16. The system of claim **10** in which at least one of said electronic devices communicates with a remote server.

17. The system of claim **10** further comprising a remote computer that varies said first temperature setpoint.

18. The system of claim **10** in which said first temperature setpoint is varied automatically based on said input from said one or more users.

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